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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/836,685 | 04/17/2001 | Jefferson E. Odhner | LUC 2-026-3 | 7184 |

7590 08/04/2005

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EXAMINER

LAVARIAS, ARNEL C

ART UNIT PAPER NUMBER

2872

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 09/836,685 | Applicant(s) ODHNER ET AL. | |
| | Examiner Arnel C. Lavarias | Art Unit 2872 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,17 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,17 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendments to Claims 1, 17, and 32 in the submission dated 6/3/05 are acknowledged and accepted.

Response to Arguments

2. The Applicants argue that, with respect to newly amended Claims 1, 17, and 32, the combined teachings of Asakura, Kompfner, and Essemmlali fail to teach or reasonably suggest the holographic diffraction grating including an array of superimposed facets. After a review of the Asakura, Kompfner, and Essemmlali references, the Examiner agrees, and respectfully withdraws the rejections of Claims 1, 3, 17, and 32 in Sections 7-8 of the Office Action dated 11/26/04.
3. Claims 1, 3, 17, and 32 are now rejected as follows.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1, 17, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asakura (U.S. Patent No. 5450512), of record, in view of Doggett (U.S. Patent No. 4528448).

Asakura discloses a system and method for treating optical signals from a source (See for example Figures 7-8), comprising a source (inherently, a source of light is required to generate the signals having wavelengths of $\lambda_1, \lambda_2, \lambda_3, \lambda_4$), a rotatable diffractive optical element (See 92 in Figure 8; col. 4, line 57-col. 5, line 2), and output stations (See 98, 99 in Figure 8), wherein the source carries input optical signals (See 90 in Figure 8), each of said signals being associated with a particular wavelength; the rotatable diffractive optical element (See 92 in Figure 8; col. 4, line 57-col. 5, line 2) has a surface (i.e. a single facet) carrying a diffraction grating and positioned to intercept said input optical signals for generating output optical signals and distributing any output optical signals to any output optical station (See col. 1, line 39-54; col. 2, line 49-col. 3, line 18); and the output stations positioned to receive said output optical signals from the rotatable diffractive optical element (See 98, 99 in Figure 8). Asakura lacks the rotatable diffractive optical element being holographic and including an array of superimposed facets, each of the facets carrying a diffraction grating(s) which are superimposed, each diffraction grating being angularly offset with respect to each other. However, Doggett teaches a conventional holographic disk used to diffract light to a particular point in space (See Abstract; Figures 1-2). In particular, Doggett teaches that the disk may be made interferometrically or holographically, and that holographic diffracting elements on the disk may include an array of superimposed facets, each of the facets carrying a

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diffraction grating(s) which are superimposed, each diffraction grating being angularly offset with respect to each other (See for example Figures 3A, 5-7; col. 3, line 14-col. 4, line 17). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the rotatable diffractive optical element of the system and method of Asakura further be holographic and include an array of superimposed facets, each of the facets carrying a diffraction grating(s) which are superimposed, each diffraction grating being angularly offset with respect to each other, as taught by Doggett, for the purpose of increasing the duty cycle and multiplexing and demultiplexing capability of the system, since a larger number of input signals may be input and multiplexed/demultiplexed by the diffraction gratings, while preventing degradation of the diffracted output signals.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asakura in view of Doggett as applied to Claim 1 above, and further in view of Mey et al. (U.S. Patent No. 5608278), of record.

Asakura in view of Doggett discloses the invention as set forth above in Claim 1, except for the rotatable diffractive optical element being provided as a magnet having a rotatable holographic diffraction grating attached to the magnet and being magnetically coupled to a coil energizable for movement of the magnet and the diffraction grating. However, Mey et al. teaches a method and apparatus for moving a diffractive optical element (See Figures 1, 3, 4), comprising a magnet (See for example 72 in Figure 3) having a holographic diffraction element (See 26 in Figure 3) attached thereto, and being magnetically coupled to a coil (See col. 4, lines 7-49) energizable for movement of the

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magnet and diffraction grating. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate a magnetically movable diffractive optical element, as taught by Mey et al., in the system and method for treating optical signals from a source, as disclosed by Asakura in view of Doggett. One would have been motivated to do this to utilize fewer moving parts, thus decreasing system complexity and cost, as well as reduce system start-up torque, thus reducing the amount of power required to operate the system.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No. 4787688 to Rumfola.

Rumfola is being cited to evidence a conventional hologon element that includes superimposed facets, each facet having at least one holographic diffractive element (See for example Figures 7-8).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not


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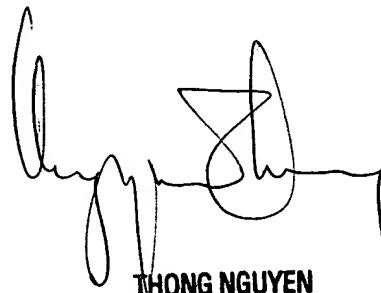
mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Arnel C. Lavarias
8/1/05


THONG NGUYEN
PRIMARY EXAMINER
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